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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/537,927	01/25/2006	Thomas Bowker	STADM-71279	8585

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EXAMINER	
SMITH, CHAD	

ART UNIT	PAPER NUMBER
2874	

MAIL DATE	DELIVERY MODE
12/12/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary	Application No.	Applicant(s)	
	10/537,927	BOWKER ET AL.	
	Examiner	Art Unit	
	Chad H. Smith	2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 December 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4-17,21,22 and 25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4-17,21,22, and 25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/3/07 has been entered.

Response to Amendment

Applicant's amendment filed 12/3/07 has been fully considered and entered.

The indicated allowability of claim 21, 22 and 25 is withdrawn in view of the newly discovered reference(s) to U.S. Patent # 4,725,122 , U.S. Patent # 6,442,304 B1 and U.S. Patent # 6,203,869 B1. Rejections based on the newly cited reference(s) follow.

Response to Arguments

Applicant's arguments with respect to claims 1, 2, and 4 - 17 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 7, 8, 9, 10, 14, 15, and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Anelli et al. (U.S. Patent # 4,725,122).

Regarding claims 7, 14 and 15 '122 teaches an optical fiber suitable for deployment in a harsh environment, comprising: an optical fiber (2) having core portion and a cladding portion (necessarily the fiber has a core and a cladding portion for propagating the optical signal, United States Navy, Nonresident training course September 1998 - Navy Electricity and Electronics Training Series, pgs. 2-10 and 2-11); and a flexible barrier material disposed and hermetically sealed about an outer diameter of the optical fiber for protecting the optical fiber from the harsh environment such that there is no liquid disposed between the flexible barrier material and the outer diameter of the optical fiber (sheath (1), fig. 2, fig. 1 shows the cable being completely enclosed by a metal sheath, col. 4, line 29,and the cable is used for submarine applications (col. 2, lines 36 - 37), col. 3, lines 40 – 43, fig. 3); and a hydrogen scavenging material applied to an inner wall of the flexible barrier material for preventing permeation of fluid or gas through the flexible barrier material (fig. 3).

Regarding claim 8, '122 teaches wherein the flexible barrier (cable) is a thin tubing (fig. 1).

Regarding claim 9, '122 teaches wherein the flexible barrier encases the optical fiber, core portion and the cladding portion (fig. 1).

Regarding claim 10, '122 teaches wherein the flexible barrier is made of a material that prevents the transmission of water vapor or gas from harsh environment into the fiber (col. 3, lines 56 – 61).

Regarding claim 21, '122 teaches an optical fiber assembly for deployment down a capillary tube located in a well bore, comprising: an optical fiber (2) having a core portion and a cladding portion (necessarily the fiber has a core and a cladding portion for propagating the optical signal, United States Navy, Nonresident training course September 1998 - Navy Electricity and Electronics Training Series, pgs. 2-10 and 2-11); a flexible protective tube having an outside surface and an inside surface, the inside surface encasing the optical fiber along the entire length of the optical fiber intended to be deployed down the capillary tube such that there is no liquid between the inside surface of the flexible protective tube and the optical fiber, the flexible tube being hermetically sealed (sheath (1), fig. 2, fig. 1 shows the cable being completely enclosed by a metal sheath, col. 4, line 29,and the cable is used for submarine applications (col. 2, lines 36 - 37), col. 3, lines 40 – 43, fig. 3); and a hydrogen scavenging material applied to the inside surface of the flexible tube for preventing permeation of fluid or gas through the flexible tube (fig. 3).

The patentability of an apparatus depends only on the claimed structural limitations. '122 teaches a structure that is substantially identical to that of the claimed invention, therefore the claimed properties or functions are presumed to be inherent. The burden is on the applicant to show that the optical fiber assembly device does not possess these functional characteristics. See MPEP 2112.01.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 2, 4, 5, 6, 13 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anelli et al. (U.S. Patent # 4,725,122) in view of Crawley et al. (U.S. Patent # 6,442,304 B1).

Regarding claims 1 and 2 '122 teaches a fluidless optical fiber assembly capable of deployment down an instrumentation tube located in a well bore, comprising: a flexible tube (col. 3, lines 39 – 40) having a lumen surrounded by a wall (fig. 1), the lumen having an inner diameter (fig. 1, inner diameter of the sheath); and an optical fiber (2) having a core portion and

a cladding portion disposed within the flexible tube (necessarily the fiber has a core and a cladding portion for propagating the optical signal, United States Navy, Nonresident training course September 1998 - Navy Electricity and Electronics Training Series, pgs. 2-10 and 2-11), the optical fiber having an outer diameter smaller than an inner diameter of the lumen of the flexible tube (fig. 1), such that an entire length of the optical fiber intended to be deployed down the instrumentation tube fits within the lumen of the flexible tube without the inclusion of any liquid between the optical fiber and the inner diameter of the lumen of the flexible tube (col. 3, line 31 - 34), the flexible tube being hermetically sealed (fig. 1 shows the cable being completely enclosed by a metal sheath, col. 4, line 29,and the cable is used for submarine applications (col. 2, lines 36 - 37)); and a coating applied to an inner wall of the flexible tube for preventing permeation of fluid or gas through the flexible tube (fig. 2).

'122 is silent to the flexible tube also having an outer diameter smaller than an inner diameter of the instrumentation tube. However, '304 teaches a conduit for a fiber cable to be inserted into and used for pumping the fiber cable into a well so that the fiber cable can measure such things as temperature and pressure in the well (col. 2, lines 31 – 36).

It would have been obvious at the time the invention was made to combine the teachings of '122's optical fiber assembly with '304's teaching of a conduit for a fiber cable to be inserted into so as to insert '122's optical fiber assembly into the conduit of '304 as it is used as a transportation means for the optical fiber assembly by pumping the fiber cable into a well so that the fiber cable can measure such things as temperature and pressure in the well.

Regarding claims 4 and 5 '304 teaches using liquid metal (a coating) for the pumping of the optical fiber through the conduit which also has molecules in the liquid metal for scavenging hydrogen (col. 16, lines 28 – 47, col. 17, lines 11 – 14).

Regarding claim 6, '122 teaches wherein the inner wall of the flexible tube is coated with a hydrogen scavenging material (col. 2, lines 39 – 63, col. 3, lines 39 - 55, and fig. 2).

Regarding claim 13, '122 teaches the optical fiber assembly of claim 7 as previously discussed above. '122 is silent to wherein the flexible barrier member further includes a drag enhancer attached to the flexible barrier, wherein the drag enhancer provides resistance to the flow of the optical fiber assembly during deployment. '304 teaches wherein the flexible barrier member further includes a drag enhancer attached to the flexible barrier, wherein the drag enhancer provides resistance to the flow of the optical fiber assembly during deployment so as to be able to control the direction and speed of the optical fiber movement (col. 7, lines 64 – 67, col. 8, lines 1 – 7). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of '122's optical fiber assembly for deployment in a harsh environment with '304's teaching of a drag enhancer attached to the flexible barrier, wherein the drag enhancer provides resistance to the flow of the optical fiber assembly during deployment so as to be able to control the direction and speed of the optical fiber movement.

Regarding claim 25, '122 teaches the optical fiber assembly of claim 21 as previously discussed above, but is silent to wherein the optical fiber has a distal end having a drag enhancer

mounted thereto. However, '304 teaches wherein the optical fiber further includes a drag enhancer attached to the optical fiber, wherein the drag enhancer provides resistance to the flow of the optical fiber assembly during deployment so as to be able to control the direction and speed of the optical fiber movement (col. 7, lines 64 – 67, col. 8, lines 1 – 7). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of '122's optical fiber assembly for deployment in a harsh environment with '304's teaching of a drag enhancer attached to the optical fiber end, wherein the drag enhancer provides resistance to the flow of the optical fiber assembly during deployment so as to be able to control the direction and speed of the optical fiber movement.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Anelli et al. (U.S. Patent # 4,725,122) in view of Schultz et al. (U.S. Patent # 5,493,626).

'122 teaches the basic claimed optical fiber assembly as discussed in claim 10 above, but is silent to wherein the flexible barrier is made of stainless steel. However, '626 teaches a protective sheath surrounding the optical fiber that is composed of stainless steel so as to provide a fluid seal that can be laser welded so as not to overheat the contents of the cable assembly (col. 6, lines 3 – 9). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the optical fiber assembly taught by '122 with '626's teaching of using stainless steel as a flexible barrier steel so as to provide a fluid seal that can be laser welded so as not to overheat the contents of the cable assembly.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Anelli et al. (U.S. Patent # 4,725,122) in view of Randazzo (U.S. Patent # 4,687,293).

'122 teaches the basic claimed optical fiber assembly as discussed in claim 10 above. '122 is silent to wherein the flexible barrier is made of nickel steel. However, '293 teaches using a metal sheath composed of a stainless steel containing a high concentration of nickel so as to surround the optical fiber and protect it from acidic environments (col. 5, lines 11 – 15).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of '122's optical fiber assembly for deployment in a harsh environment with '293's teaching of teaches using a metal sheath composed of a stainless steel containing a high concentration of nickel so as to surround the optical fiber and protect it from acidic environments.

Claims 16, 17 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anelli et al. (U.S. Patent # 4,725,122) in view of Dougherty et al. (U.S. Patent # 6,203,869 B1).

'122 teaches the optical fiber assembly as previously discussed above, but is silent to wherein the flexible barrier includes a coating applied to an outer surface of the flexible barrier for preventing permeation of fluid or gas through the wall of the flexible barrier and wherein the coating is a material that reacts with hydrogen to form a molecule that cannot permeate the wall of the flexible barrier tube. However, '869 teaches a hydrogen gettering material to be used as a coating mixed with an adhering epoxy to stop hydrogen from interacting with hydrogen sensitive

components (col. 2, lines 35 – 40, and lines 48 – 50). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of '122's optical fiber assembly for deployment in a harsh environment with '869's teaching of a hydrogen gettering material to be used as a coating mixed with an adhering epoxy to stop hydrogen from interacting with hydrogen sensitive components and applying this epoxy mixed with Palladium resin to the outer surface of the hermetically sealed fiber assembly for a greater protection strength in resisting hydrogen.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chad H. Smith whose telephone number is (571) 270-1294. The examiner can normally be reached on Monday-Thursday 7:30a.m. - 5:00p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on 571-270-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Chad H. Smith/
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12/10/07